TCAS?
What's TCAS?

by Lt. Chris Fordham

It was a bright, sunny day in late spring, and the day's mission was multiple CAG lifts. The mission looked to be a "banker's hours" flight: 0700 brief for a 0900 launch, with 90-minute legs. The weather was forecast to be nearly CAVU.

Jacksonville to Oceana was a deadhead leg (no pax or cargo). The flight up was uneventful, until we started our descent. We were handed off to Approach, who approved our request for a visual approach to a full stop on Runway 05R. The approach path took us over some FCLPs at an outlying field, but we were way above pattern altitude. As we approached the air station, we heard a flight of Hornets behind and above us, checking in with Approach.

We switched off to tower at 10 miles and 5,000 feet and started configuring the aircraft for landing. We sidestepped to the right to avoid over-flying the FCLPs during our descent (it is hard to see aircraft directly below you in the C-9). As we passed through 3,000 feet, we picked up the flight of Hornets on our TCAS (the Traffic Alert and Collision Avoidance System). They were about three miles above us at our 5 o'clock and descending.

The Hornets requested the break for runway 05L and were cleared as such. We thought they would adjust their flight path to come in behind us, so we continued our long straight-in, keeping an eye on the TCAS. The Hornets had a different idea. They called us "in sight" and kept the throttles up and their noses down. In a minute, they were less than a mile behind us, leveling at 1,500 feet, with a high rate of closure. We were descending through 2,000 feet at this point, almost in final landing configuration. The TCAS started giving us traffic proximity alerts (called TAs), still an advisory at this point.

From the TCAS, we determined that the lead Hornet would fly right under our airplane, with little or no altitude separation, if we both maintained our current flight paths. The aircraft commander concentrated on flying the airplane, with the crew chief backing him up, while I looked for the lead Hornet at our 5 o'clock. The TAC gave a quick brief on when and how we would execute a missed approach, if necessary.

As I called visual on the lead Hornet, the TCAS started giving us a resolution advisory (RA), telling us to climb. An RA means if flight paths are not altered, a collision will occur in 30 seconds.

Photo-composite illustration by Allan Amen

Our concern had suddenly increased dramatically. However, we knew the Hornet had us visually, and we wanted to avoid a missed approach, if possible. The aircraft commander applied power and leveled off, verifying that I had the Hornet in sight and that we had altitude separation. Satisfied with my separation calls, he said he was level and was slowing. Within a few seconds, the Hornet had passed under us, moving right to left, and the TCAS ceased giving alerts. We flew a visual approach and made an uneventful landing. After we had shut down, the aircraft commander asked me if I had been comfortable with his actions, which I had, based on the weather, the fact that I could see the Hornet, and his statements about his intentions.

If the weather had been less favorable or if I hadn't been able to verify visual separation, we would have been forced to go around due to the TCAS resolution advisory. No big deal, but if the tower had vectored the Hornets behind and around us, the TCAS would not have been tripped at all. Also, the TCAS audio alert is extremely loud. Had there been any passengers on board, they would easily have heard the RA blaring, "Climb, climb!" in the cabin. Scaring the fleet CINC is high on our list of "avoid" items.

After we had shut down, we walked in to ATC and talked with the controllers. They didn't know we were equipped with TCAS, which explained why they had cleared the Hornets in for the break right behind us. They apologized and understood our concern about the way events had unfolded.

The Hornet pilots did nothing wrong. They were cleared in for the break, had us visually on a VFR day (an easy target), and probably never heard of TCAS. On behalf of VR pilots, I'd ask our TACAIR brethren to give all military-transport aircraft the same separation that they give civilian aircraft in the future.

Lt. Fordham flies C-9B and DC-9 aircraft with VR-58.